What is claimed is:

1. An imaging optical system including a variable magnification optical system, the variable magnification optical system comprising, in order from an object side toward an image side:

a first lens unit with positive refractive power;

a second lens unit with positive refractive power;

a third lens unit with negative refractive power;

a fourth lens unit with positive refractive power, and

an aperture stop interposed between the third lens unit and the fourth lens unit,

wherein the variable magnification optical system changes an imaging magnification while keeping a distance between an object and an image constant in the imaging optical system, the imaging magnification is changed by varying spacing between the first lens unit and the second lens unit, spacing between the second lens unit and the third lens unit, and spacing between the third lens unit and the fourth lens unit, and when the imaging magnification is changed, the imaging optical system satisfies the following conditions in at least one variable magnification state:

$$| En | / L > 0.4$$

$$| Ex | / | L / \beta | > 0.4$$

where En is a distance from a first lens surface on the object side of the variable magnification optical system to an entrance pupil of the imaging optical system, L is the distance between the object and the image in the imaging optical system, Ex is a distance from a most image-side lens surface of the variable magnification optical system to an exit pupil of the imaging optical system, and β is a magnification of an entire system of the imaging optical system.

2. An imaging optical system according to claim 1, further satisfying the following conditions:

$$1.0 < MAXFNO < 8.0$$

$$|\, \Delta FNO / \Delta\beta \,| < 5$$

where MAXFNO is a smallest object-side F-number where the imaging magnification of the imaging optical system is changed, ΔFNO is a difference between the object-side F-number at a minimum magnification and the object-side F-number at a maximum magnification in the entire system of the imaging optical system, and $\Delta\beta$ is a difference between the minimum magnification and the maximum magnification in the entire system of the imaging optical system.

3. An imaging optical system according to claim 1, further satisfying the following condition:

$$0.6 < |\, (R3f + R3b) / (R3f - R3b) \,| < 5.0$$

where R3f is a radius of curvature of a most object-side surface of the third lens unit and R3b is a radius of curvature of a most image-side surface of the third lens unit.

4. An imaging optical system according to claim 1, wherein a most object-side lens of the first lens unit has positive refractive power.

5. An imaging optical system according to claim 1, wherein the first lens unit includes, in order from the object side, a lens with positive refractive power, a lens with negative refractive power, and a lens with positive refractive power.

6. An imaging optical system according to claim 1, wherein the third lens unit includes at least two meniscus lenses, each with a convex surface directed toward the object side.

7. An imaging optical system according to claim 1, wherein the third lens unit includes two meniscus lenses, each with negative refractive power, and one meniscus

lens with positive refractive power.

8. An optical apparatus having an imaging optical system, the imaging optical system including a variable magnification optical system, the variable magnification optical system comprising, in order from an object side toward an image side:

a first lens unit with positive refractive power;

a second lens unit with positive refractive power;

a third lens unit with negative refractive power;

a fourth lens unit with positive refractive power, and

an aperture stop interposed between the third lens unit and the fourth lens unit,

wherein the variable magnification optical system changes an imaging magnification while keeping a distance between an object and an image constant in the imaging optical system, the imaging magnification is changed by varying spacing between the first lens unit and the second lens unit, spacing between the second lens unit and the third lens unit, and spacing between the third lens unit and the fourth lens unit, and when the imaging magnification is changed, the imaging optical system satisfies the following conditions in at least one variable magnification state:

$$| En | / L > 0.4$$

$$| Ex | / | L / \beta | > 0.4$$

where En is a distance from a first lens surface on the object side of the variable magnification optical system to an entrance pupil of the imaging optical system, L is the distance between the object and the image in the imaging optical system, Ex is a distance from a most image-side lens surface of the variable magnification optical system to an exit pupil of the imaging optical system, and β is a magnification of an entire system of the imaging optical system.